GP-303714

FUEL CELL SYSTEM BURP CONTROL

ABSTRACT OF THE DISCLOSURE

Fuel cell parameters and limited electrochemical fuel cell sensors are used to calculate the concentration of diluting gas on the anode side of the fuel cell. The calculated concentration is then used to optimize fuel cell efficiency and/or stability by controlling the evacuation of diluted fuel from the anode side of the cell. In accordance with one embodiment of the present invention the dilution gas crossover rate of the membrane electrode assembly is calculated and the dilution gas concentration in the anode flow field is determined as a function of the crossover rate. The vent valve is opened when the dilution gas concentration in the anode flow field is above a high threshold value and is closed when the dilution gas concentration in the anode flow field is below a low threshold value.